IN THE CLAIMS

Following are the claims as are currently pending for consideration:

1. (Currently Amended) A method comprising:

generating a digital voltage sequence;

converting the digital voltage sequence to a first current signal having an adjustable bias mode, wherein a dynamic adjustment can be made to internally select any of a plurality of different bias currents, and a modulation mode;

adjusting the bias mode of said first current signal through one or more bias control input; and

driving a first laser using said first current signal to generate a first optical signal transmission.

2. (Original) The method of Claim 1 further comprising:

adjusting the modulation mode of said first current signal through one or more modulation control input.

3. (Original) The method of Claim 1 further comprising:

using a digital clock signal to generate the digital voltage sequence;

converting the digital clock signal to a second current signal having an adjustable bias mode and a modulation mode;

adjusting the bias mode of said second current signal through said one or more bias control input; and

driving a second laser using said second current signal to generate a second optical signal transmission.

4. (Currently Amended) A method comprising:

generating a digital voltage sequence;

converting the digital voltage sequence to a first current signal having a bias mode and an adjustable modulation mode, wherein a dynamic adjustment can be made to internally select any of a plurality of different modulation currents;

adjusting the modulation mode of said first current signal through one or more modulation control input; and

driving a first laser using said first current signal to generate a first optical signal transmission.

5. (Original) The method of Claim 4 further comprising:

adjusting the bias mode of said first current signal through one or more bias control input.

6. (Original) The method of Claim 4 further comprising:

using a digital clock signal to generate the digital voltage sequence;

converting the digital clock signal to a second current signal having a bias mode and an adjustable modulation mode;

adjusting the modulation mode of said second current signal through said one or more modulation control input; and

driving a second laser using said second current signal to generate a second optical signal transmission.

7. (Currently Amended) An optical device driver comprising:

a buffered level shifter circuit to shift an input voltage to a first voltage level or to a second voltage level;

a modulation circuit to generate a first current signal of a modulation mode responsive to the input voltage of the first voltage level and to generate the first current signal of a bias mode responsive to the input voltage of the second voltage level;

a bias control circuit to adjust the bias mode of said first current signal through one or more bias control inputs to internally select any of a plurality of different bias currents; and

a modulation control circuit to adjust the modulation mode of said first current signal through one or more modulation control inputs to internally select any of a plurality of different modulation currents.

8. (Original) The optical device driver of Claim 7 wherein said buffered level shifter circuit is tunable through k+1 control signals to shift an input of the laser driver to a controlled voltage level at a controlled rate and with adjustable impedance responsive to a transition of said digital voltage sequence.

9. (Original) The optical device driver of Claim 7, said modulation circuit comprising:

a pMOSFET, a first nMOSFET and a second nMOSFET, the modulation circuit to cause the first current signal of the modulation mode to flow from a laser power source through the first nMOSFET and second nMOSFET responsive to the input of the laser driver being shifted to the first voltage level, and to causes the current signal of the bias mode to flow from the laser power source through the bias control when another current flows from a second power source through the pMOSFET responsive to the input of the laser driver being shifted to the second voltage level.

10. (Previously Presented) The optical device driver of Claim 9 wherein an input gate of a third nMOSFET is coupled with the second power source to reduce an overshoot of the first current signal.

11. (Original) The optical device driver of Claim 7 further comprising:

a plurality of capacitors coupled with the bias control to reduce a series resistance in comparison to a termination resistance.

12. (Original) The optical device driver of Claim 7 wherein the modulation circuit is a CMOS circuit.

13. (Original) The optical device driver of Claim 12 further comprising:

a VCSEL laser diode.

14. (Currently Amended) An optical signaling system comprising:

a digital electronic interface to transmit a digital voltage input sequence;

a buffered level shifter circuit to shift an input voltage to a first voltage level or to a second voltage level responsive to the digital voltage input sequence;

a modulation circuit to generate a first current signal of a modulation mode responsive to the input voltage of the first voltage level and to generate the first current signal of a bias mode responsive to the input voltage of the second voltage level;

a bias control circuit to adjust the bias mode of said first current signal through one or more bias control inputs to internally select any of a plurality of different bias currents;

a modulation control circuit to adjust the modulation mode of said first current signal through one or more modulation control inputs to internally select any of a plurality of different modulation currents; and

a laser to generate an optical signal responsive to the first current signal.

15. (Original) The optical signaling system of Claim 14 wherein said buffered level shifter circuit is tunable through k+1 control signals to shift an input of the laser driver to a controlled voltage level at a controlled rate and with adjustable impedance responsive to a transition of said digital voltage sequence.

16. (Original) The optical signaling system of Claim 14, said modulation circuit further comprising:

a pMOSFET, a first nMOSFET and a second nMOSFET, the modulation circuit to cause the first current signal in the modulation mode to flow between the laser, the first nMOSFET and the second nMOSFET responsive to the input of the laser driver being shifted to a first voltage level, and to causes the first current signal in the bias mode to flow between the laser and the bias control when another current flows through the pMOSFET responsive to the input of the laser driver being shifted to a second voltage level.

17. (Currently Amended) The optical signaling system of Claim 16 wherein an input gate of a third nMOSFET is coupled with a power source of the pMOSFET to reduce an overshoot of the first current signal.

18. (Original) The optical signaling system of Claim 14 wherein the laser is a VCSEL diode.

19. (Original) The optical signaling system of Claim 14 wherein adjusting the modulation mode of the current signal is accomplished by setting one or more inputs of the modulation control.

20. (Original) The optical signaling system of Claim 19 wherein adjusting the bias mode of the current signal is accomplished by setting one or more inputs of the bias control.

21. (Original) The optical signaling system of Claim 14 further comprising:

a plurality of capacitors coupled with the bias control to reduce a series resistance in comparison to a termination resistance.